MES-01

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jan Siedler**	2.	Telephone: **480-644-3122**
3.	E-mail **Jan.Siedler@cityofmesa.org**	4.	Date: 08-29-2006

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Mesa

2. Year (Please check only one box):

   X FY 2008 ☐ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Within City of Mesa – two primary corridors - Mesa Drive and Main Street

4. Type of Work (Description of the work to be performed):

   Expand Mesa's fiber optic network and provide communications links between TMC and 11 traffic signals and ITS devices.

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $1,000,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **X** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $1,220,000

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees

   ☐ General Fund ☐ Bond Proceeds

   ☐ Sales Tax ☐ Private

   ☐ Property Tax **X** Other, Please specify: **Local Transportation Fund**

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $2,220,000

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – Downtown Mesa Connectivity FY2008

1. Map attached.

2. Project description

   Mesa is expanding their ITS network and have a number of ITS field elements deployed around the City, including traffic signals, DMS, CCTV cameras, and system detectors. Mesa is converting their existing traffic signals from the older SONEX system to the newer ICONS traffic management system, using a systematic approach outlined in the telecommunications master plan, summarized in the City's ITS Strategic Plan.

   This project will expand Mesa's fiber optic network and convert 11 traffic signals from the older SONEX system to the newer ICONS traffic signal control system. Downtown Mesa Connectivity (Mesa Drive and Main Street), which totals about 3.5 mi, will provide connection to the future Central Phoenix/East Valley Light Rail Project, the Main Street ITS Project, and the West Loop ITS Project. This project meets federal aid criteria and is currently at the 95% design submittal stage.

3. Why project should receive MAG federal funding

   Building on ITS Projects such as Stapley Rd. ITS project, the West Loop project, and the Broadway Rd. ITS Project by providing connectivity to the TMC, a means to transport video and data and maximizes the original investment in fiber optic infrastructure. Traffic monitoring where none previously existed, ability to provide wireless network access, establishing communications to satellite facilities, and remote vehicle detection management are benefits gained by funding this project. The City of Mesa can utilize this equipment to provide a more efficient ITS system providing a quicker, more appropriate response to traffic congestion, and highlight the true potential of ITS devices and the positive impact they have on the motoring public.

4. Multi-modal issues

   Remote access and viewing of video detection or machine vision technology allows a system's operator to identify pedestrian and bicyclist presence. Additionally, this capability allows system operators to adjust and improve bicycle and pedestrian detection zones This provides the traffic signal technicians a window to the intersection to determine the Advance Traffic Management System's influence over the controller and the actual real world conditions at the intersection to properly diagnose problems with pedestrian and bicycle timing, and actuation operation.

5. Older adults needs

   Generally, this project meets the needs of older adults by providing faster and more efficient central control which improves pedestrian and vehicular traffic conditions.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – Downtown Mesa Connectivity FY2008

6. Cost breakdown

An estimate of construction cost based on the summary of quantities and recent bid prices was prepared based on the 60% design level.

Description	Quantity	Cost
Pavement & Sidewalk R & R	LS	$16,000.0
Conduit 4-2"	9550 LF	$1,118,000.0
Pull boxes installed	35 ea	$121,000.0
Fiber optic cable installed	20,935 LF	$142,000.0
Fiber Optic Splice Closure	11	$60,000.0
Integration of ITS Field Devices	LS	$36,000.0
Mobilization, support equipment, traffic control	LS	$134,000.0
Pothole (Existing Utility)	313ea	$151,000.0
Contingencies	10	$42,000.0

$1,820,000
$400,000
$2,220,000

7. Schedule for obligating project

Kick Off Meeting	November	2008
Design Concept Report (DCR) and Environmental Clearance	March	2009
Preliminary Plans (30% Stage) And Preliminary Cost Estimate	April	2009
60% Stage Plans, Specs, and Estimate	June	2009
Submit 95% PS&E (Plans Specs and Estimate)	August	2009
Submit Final Plans (100% Complete)	October	2009
Job advertised (if all clearances on file and current)	November	2009

MCDOWELL

DOBSON

MCKELLIPS

202

MESA

BROWN

MCCLINTOCK

Mesa TMC

GILBERT

LINDSAY

VAL VISTA

UNIVERSITY

STAPLEY

PRICE

ALMA SCHOOL

DOBSON

COUNTRY CLUB

City Hall

101

60

SOUTHERN

NTS

Legend

(Traffic Signal

CCTV Cameras

Mesa

County Boundary

Project Location

Important Facility

DOWNTOWN MESA CONNECTIVITY FY2008

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **35,800**	2. Name of the Roadway Section Used for the ADT Estimate: **Main St.**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) X Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **4**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **4**	6. Length of the Facility (in miles): **3.5**
7. Township Coordinate of the Midpoint of the Facility: **T1N**	8 Range Coordinate of the Midpoint of the Facility: **R5E**	9. Section Coordinate of the Midpoint of the Facility: **22**

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **30 mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
X	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

X Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
X The Project Conforms to Local Land Use Plans
X The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

X Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

2

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

MES-02

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

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This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

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302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
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MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jan Siedler**	2.	Telephone: **480-644-3122**
3.	E-mail **Jan.Siedler@cityofmesa.org**	4.	Date: **08-30-2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Mesa

2. Year (Please check only one box):

   ☐ FY 2008 **X** FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Baseline Road (Dobson – Mesa Dr.)
   Southern Avenue (Dobson – Country Club Dr.)
   Dobson Road (Southern – Baseline Rd.)
   Alma School (Southern – Baseline Rd.)

4. Type of Work (Description of the work to be performed):

   Establish fiber optic communications on parallel and perpendicular arterials around US60 in west Mesa.

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $1,000,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **X** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $1,603,000

8. Type of Local Funds to be Used: (Please check only one box.):

   X HURF ☐ Impact Fees
   ☐ General Fund ☐ Bond Proceeds
   ☐ Sales Tax ☐ Private
   ☐ Property Tax ☐ Other, Please specify:

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $2,603,000

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – US60 Corridor Relief FY2009

1. Map attached.

2. Project description

   This project includes segments of Dobson Road, Southern Avenue, Longmore, Extension Road, Alma School Road, and Baseline Road adjacent and parallel to US60 in Mesa. The project contains a communications node site and 33 intersections, 30 of which are operating on the old SONEX system. The project covers a distance of approximately 8.5 miles. There are three radio tower locations, a CCTV camera, two buildings over five-stories, Fiesta Mall, Mesa Community College, Banner Desert Hospital, and the Bank of America building in the project area. The project connects with existing fiber and conduit. The existing fiber on Center Street ties directly into City Hall and the Transportation Building.

   This project will meet federal aid criteria and is currently at the 60% design submittal stage.

3. Why project should receive MAG federal funding

   US60 currently experiences up to 192,000 vehicles per day with severe congestion during peak hours of traffic. A major benefit that can be achieved through better communications is reduction of travel time. Better arterial progression results in reduced traffic delay, lowered risks for accidents, decreased fuel consumptions, improved air quality, and better emergency response times.

4. Multi-modal issues

   Remote access and viewing of video detection or machine vision technology allows a system's operator to identify pedestrian and bicyclist presence. Additionally, this capability allows system operators to adjust and improve bicycle and pedestrian detection zones This provides the traffic signal technicians a window to the intersection to determine the Advance Traffic Management System's influence over the controller and the actual real world conditions at the intersection to properly diagnose problems with pedestrian and bicycle timing, and actuation operation.

5. Older adults needs

   Generally, this project meets the needs of older adults by providing faster and more efficient central control that improves pedestrian and vehicular traffic conditions. This project also provides added capacity to easily incorporate future advancements in technology.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – US60 Corridor Relief FY2009

6. Cost breakdown

An estimate of construction cost based on the summary of quantities and recent bid prices was prepared based on the 60% design level.

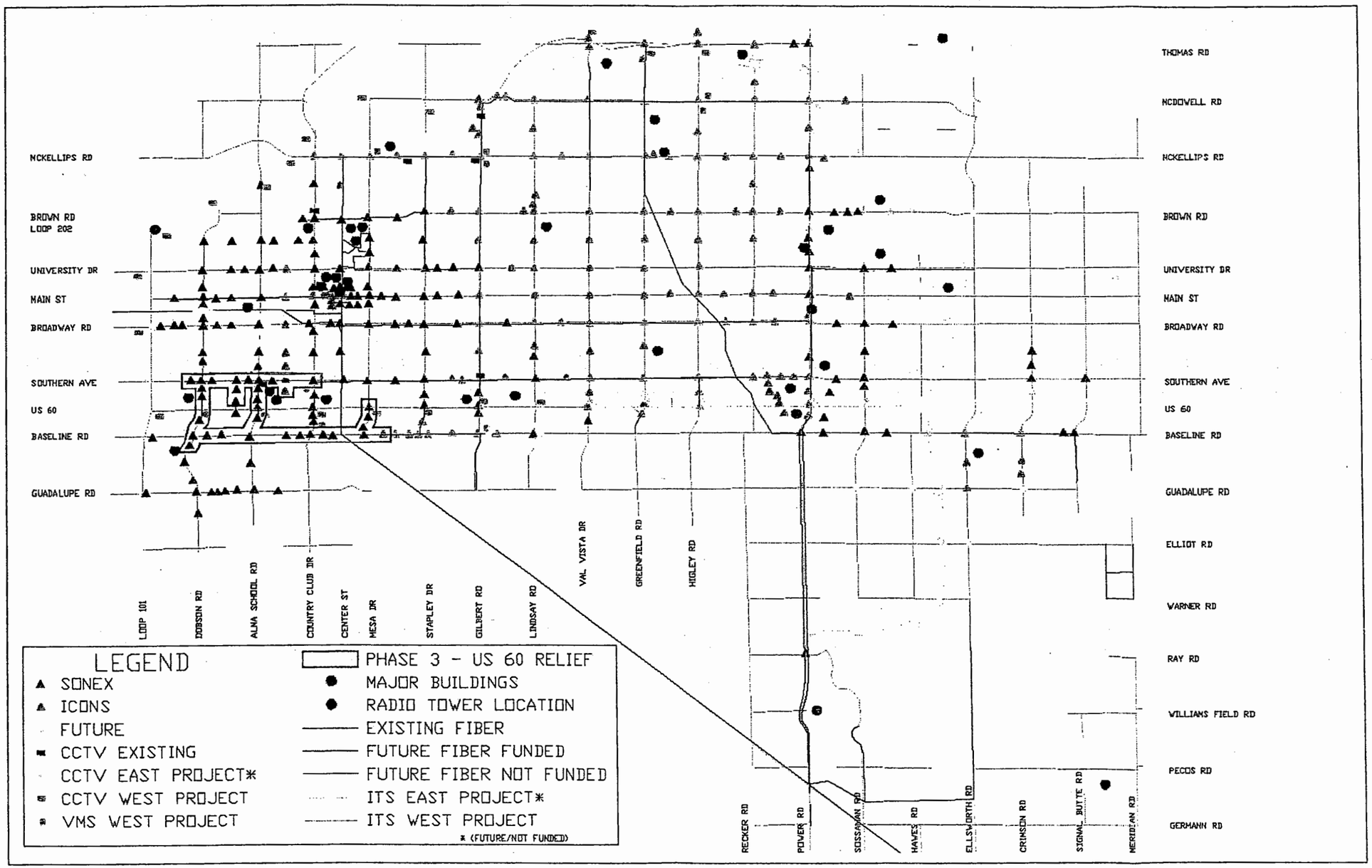
Description	Quantity	Cost
Conduit 4-2"	37,000 LF	$1,400,000.00
Pull boxes installed	44 ea	$125,000.00
Fiber optic cable installed	45,000 LF	$150,000.00
Fiber Optic Splicing	LS	$193,000.00
Integration of ITS Field Devices	LS	$89,000.00
Traffic Control	LS	$295,000.00
Conduit 2" and 8" Steel Casing	200ea	$11,000.00

$2,263,000.00
$340,000.00
$2,603,000.00

7. Schedule for obligating project

Kick Off Meeting	November	2009
Design Concept Report (DCR) and Environmental Clearance	March	2010
Preliminary Plans (30% Stage) And Preliminary Cost Estimate	April	2010
60% Stage Plans, Specs, and Estimate	June	2010
Submit 95% PS&E (Plans Specs and Estimate)	August	2010
Submit Final Plans (100% Complete)	October	2010
Job advertised (if all clearances on file and current)	November	2010

- U.S. 60 Corridor Relief



ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **43,000**	2. Name of the Roadway Section Used for the ADT Estimate: **Alma School Road**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) X Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **12.5**
7. Township Coordinate of the Midpoint of the Facility: **T1N**	8 Range Coordinate of the Midpoint of the Facility: **R5E**	9. Section Coordinate of the Midpoint of the Facility: **29,30,32,33,34**

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **30 mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
X	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☐ Includes Traffic Signal Improvements for a Single Agency
- **X** Includes Traffic Signal Improvements that Apply to More than One Agency
- **X** The Project Conforms to Local Land Use Plans
- **X** The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only <u>one</u> box)

- **X** Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

MES-03

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jan Siedler**	2.	Telephone: **480-644-3122**
3.	E-mail **Jan.Siedler@cityofmesa.org**	4.	Date: **08-30-2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Mesa

2. Year (Please check only one box):

   ☐ FY 2008 **X** FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Broadway Road (west Mesa city limits – Alma School Rd.)
   Dobson Road (Broadway – Southern Ave.)
   Alma School (Broadway – Southern Ave.)
   Baseline Road (Gilbert – Lindsay Rd.)

4. Type of Work (Description of the work to be performed):

   Establish fiber optic communications on Broadway Road and provide connectivity to the West ITS Loop.

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $1,000,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **X** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $644,000

8. Type of Local Funds to be Used: (Please check only one box.):

   X HURF ☐ Impact Fees
   ☐ General Fund ☐ Bond Proceeds
   ☐ Sales Tax ☐ Private
   ☐ Property Tax ☐ Other, Please specify:

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $1,644,000

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – West Broadway Road Corridor Relief FY2009

1. Map attached.

2. Project description

   Mesa is converting their existing traffic signals from the older SONEX system to the newer ICONS traffic management system, using a systematic approach outlined in the telecommunications master plan, summarized in the City's ITS Strategic Plan.

   This project includes segments of Broadway Road, Dobson Road, Alma School Road, and Baseline Road adjacent to Loop 101 in Mesa. The project provides connectivity to 14 intersections, 13 of which are operating on the old SONEX system. The project covers a distance of approximately 4.0 miles. The project connects one radio tower location, an existing video detection system, and existing fiber and conduit on Loop 101 and on Dobson and Alma School at Southern. Additional ITS devices (4 CCTV traffic monitoring cameras, 1 Dynamic Message Sign, 1 Video Detection System) will be added per ITS Strategic Plan.

   This project will meet federal aid criteria and is currently at the 60% design submittal stage.

3. Why project should receive MAG federal funding

   Broadway Road traffic volume is over 38,000 vehicles per day; this heavy volume impacts the operational characteristics for this arterial during peak hours. This project involves a major portion of vehicles that drive through Mesa on a daily basis.

   A major benefit that can be achieved through better communications is reduction of travel time. Better arterial progression results in reduced traffic delay, lowered risks for accidents, decreased fuel consumptions, improved air quality, and better emergency response times.

4. Multi-modal issues

   Remote access and viewing of video detection or machine vision technology allows a system's operator to identify pedestrian and bicyclist presence. Additionally, this capability allows system operators to adjust and improve bicycle and pedestrian detection zones This provides the traffic signal technicians a window to the intersection to determine the Advance Traffic Management System's influence over the controller and the actual real world conditions at the intersection to properly diagnose problems with pedestrian and bicycle timing, and actuation operation.

5. Older adults needs

   Generally, this project meets the needs of older adults by providing faster and more efficient central control that improves pedestrian and vehicular traffic conditions. This project also provides added capacity to easily incorporate future advancements in technology.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – West Broadway Road Corridor Relief FY2009

6. Cost breakdown

An estimate of construction cost based on the summary of quantities and recent bid prices was prepared based on the 60% design level.

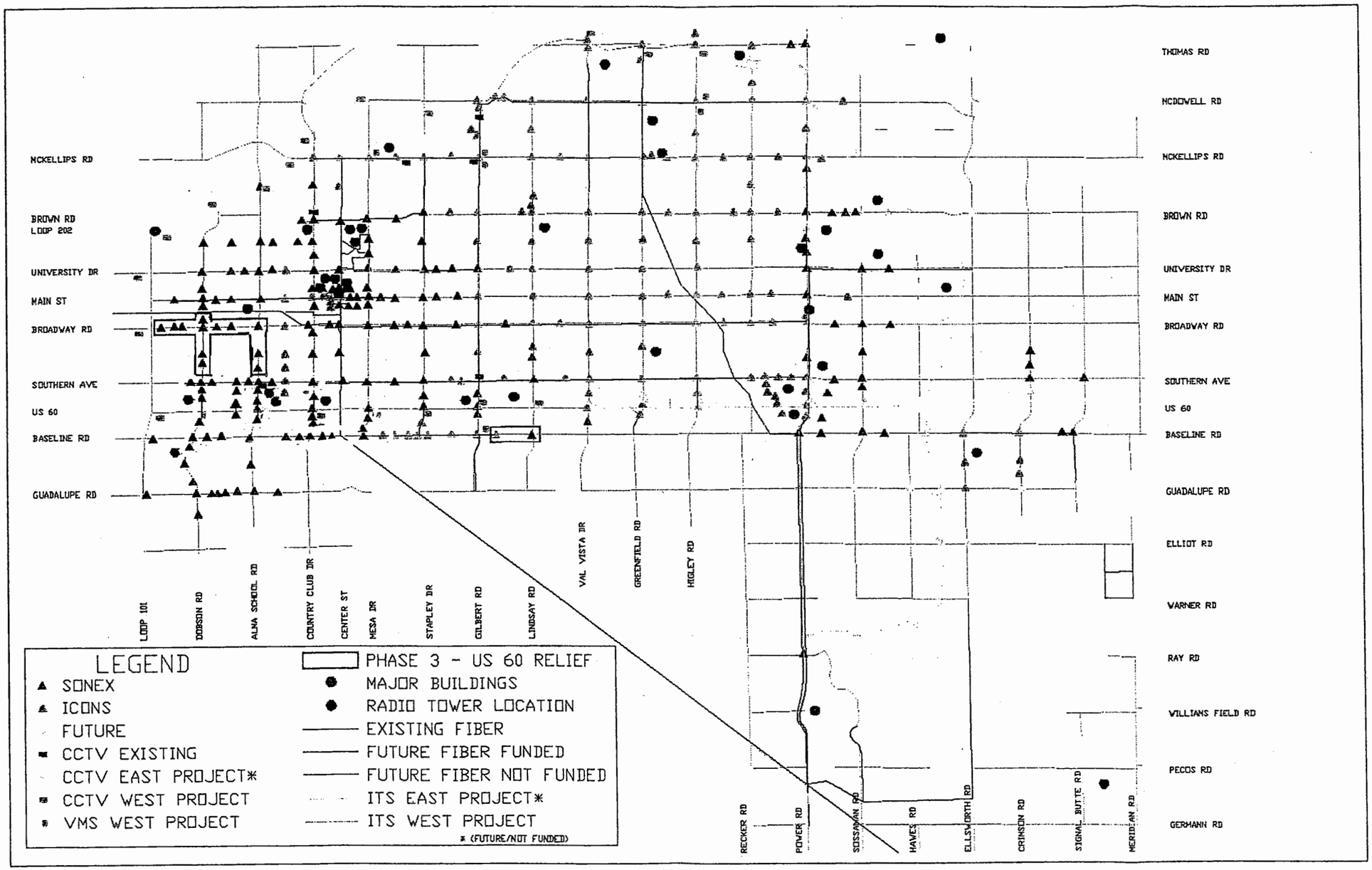
Description	Quantity	Cost
Conduit 4-2"	20,000 LF	$760,000.00
Pull boxes installed	20 ea	$57,000.00
Fiber optic cable installed	24,000 LF	$80,000.00
Fiber Optic Splicing	LS	$83,000.00
Integration of ITS Field Devices	LS	$38,000.00
Traffic Control	LS	$155,000.00
Conduit 2" and 8" Steel Casing	100ea	$6,000.00
Additional ITS Devices	6 ea	$250,000.00

$1,429,000.00
$215,000.00
$1,644,000.00

7. Schedule for obligating project

Kick Off Meeting	November	2009
Design Concept Report (DCR) and Environmental Clearance	March	2010
Preliminary Plans (30% Stage) And Preliminary Cost Estimate	April	2010
60% Stage Plans, Specs, and Estimate	June	2010
Submit 95% PS&E (Plans Specs and Estimate)	August	2010
Submit Final Plans (100% Complete)	October	2010
Job advertised (if all clearances on file and current)	November	2010

WEST BROADWAY ROAD CORRIDOR RELIEF



ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **38,000**	2. Name of the Roadway Section Used for the ADT Estimate: **Broadway Road**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) X Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **4.0**
7. Township Coordinate of the Midpoint of the Facility: **T1N**	8 Range Coordinate of the Midpoint of the Facility: **R5E,R6E**	9. Section Coordinate of the Midpoint of the Facility: **19,20,29,30 (R5E)** **31 (R6E)**

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **30 mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
X	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☐ Includes Traffic Signal Improvements for a Single Agency
- **X** Includes Traffic Signal Improvements that Apply to More than One Agency
- **X** The Project Conforms to Local Land Use Plans
- **X** The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

- **X** Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

3

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

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- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

MES-04

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M**.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jan Siedler**	2.	Telephone: **480-644-3122**
3.	E-mail **Jan.Siedler@cityofmesa.org**	4.	Date: **08-30-2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   City of Mesa

2. Year (Please check only one box):

   ☐ FY 2008 ☐ FY 2009 **X** FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   University Drive, Dobson Rd. – Country Club Dr.
   University Drive, Mesa Dr. – Higley Rd.

4. Type of Work (Description of the work to be performed):

   Enhancing existing fiber optic communications system and installing communications network and ITS devices along University Drive in Mesa.

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $1,000,000

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP **X** CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $1,594,400

8. Type of Local Funds to be Used: (Please check only one box.):

   X HURF ☐ Impact Fees
   ☐ General Fund ☐ Bond Proceeds
   ☐ Sales Tax ☐ Private
   ☐ Property Tax ☐ Other, Please specify:

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $2,594,400

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

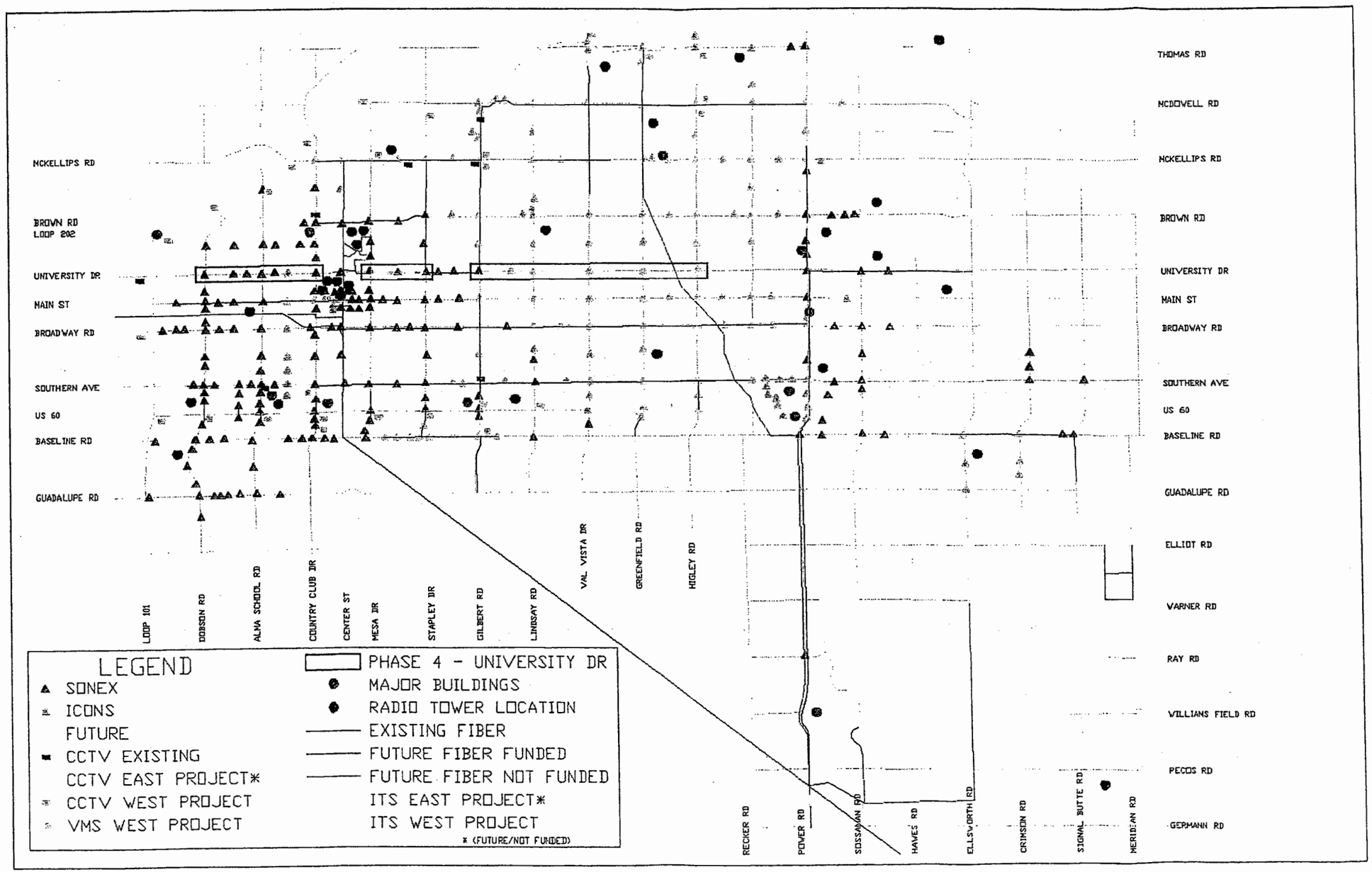
2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

– University Drive Corridor Enhancements



ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **38,000**	2. Name of the Roadway Section Used for the ADT Estimate: **University Drive**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) X Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **4**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **4**	6. Length of the Facility (in miles): **7.0**
7. Township Coordinate of the Midpoint of the Facility: **T1N**	8 Range Coordinate of the Midpoint of the Facility: **R5E,R6E**	9. Section Coordinate of the Midpoint of the Facility: **13 – 24 (R5E), 15 –22 (R6E)**

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **35 mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
X	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

X Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
X The Project Conforms to Local Land Use Plans
☐ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

X Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

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ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

MES-05

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Jan Siedler**	2.	Telephone: **480-644-3122**
3.	E-mail **Jan.Siedler@cityofmesa.org**	4.	Date: **08-30-2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name: **City of Mesa**	2. Year (Please check only one box): ☐ FY 2008 ☐ FY 2009 ☐ FY 2010 **X** FY 2012
3. Project Location (The project limits if applicable): **Guadalupe Road, Loop 101 – Extension** **Dobson Road, Lindner – Pampa** **Alma School Road – Median – Guadalupe**	
4. Type of Work (Description of the work to be performed): **Enhancing existing fiber optic communications system and installing communications network and ITS devices in southwest Mesa.**	
5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.): **$1,000,000**	6. Type of Federal Funds Requested (Please check only one box.): ☐ MAG STP **X** CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.): **$547,000**	8. Type of Local Funds to be Used: (Please check only one box.): **X** HURF ☐ Impact Fees ☐ General Fund ☐ Bond Proceeds ☐ Sales Tax ☐ Private ☐ Property Tax ☐ Other, Please specify:
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested): **$1,547,000**	

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – Dobson Ranch Ring Integrity FY2012

1. Map attached.

2. Project description

   Mesa is converting their existing traffic signals from the older SONEX system to the newer ICONS traffic management system, using a systematic approach outlined in the telecommunications master plan, summarized in the City's ITS Strategic Plan.

   The project includes deploying and upgrading ITS devices along existing fiber optic communications lines on Dobson Rd. The project also includes installing 4-2" conduit (quad) duct, fiber optic cabling, and ITS devices along Guadalupe and Alma School. The project provides for 8 signalized intersections to be upgraded from the old SONEX system to the new ICONS system. The project covers a distance of approximately 4.5 miles. The project incorporates one radio tower location into the network. Connectivity to the final remaining signals in west Mesa is the driving factor of this project. It ties in with ITS West Project at Loop 101 and Guadalupe Road, providing an additional ring for the network.

3. Why project should receive MAG federal funding

   A major benefit that can be achieved through better communications is reduction of travel time. Better arterial progression results in reduced traffic delay, lowered risks for accidents, decreased fuel consumptions, improved air quality, and better emergency response times. Additional or upgraded ITS devices will improve overall system performance.

4. Multi-modal issues

   Remote access and viewing of video detection or machine vision technology allows a system's operator to identify pedestrian and bicyclist presence. Additionally, this capability allows system operators to adjust and improve bicycle and pedestrian detection zones This provides the traffic signal technicians a window to the intersection to determine the Advance Traffic Management System's influence over the controller and the actual real world conditions at the intersection to properly diagnose problems with pedestrian and bicycle timing, and actuation operation.

5. Older adults needs

   Generally, this project meets the needs of older adults by providing faster and more efficient central control that improves pedestrian and vehicular traffic conditions. This project also provides added capacity to easily incorporate future advancements in technology.

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description
Section Two – Project Description
City of Mesa – Dobson Ranch Ring Integrity FY2012

6. Cost breakdown

An estimate of construction cost based on the summary of quantities and recent bid prices was prepared based on the 60% design level.

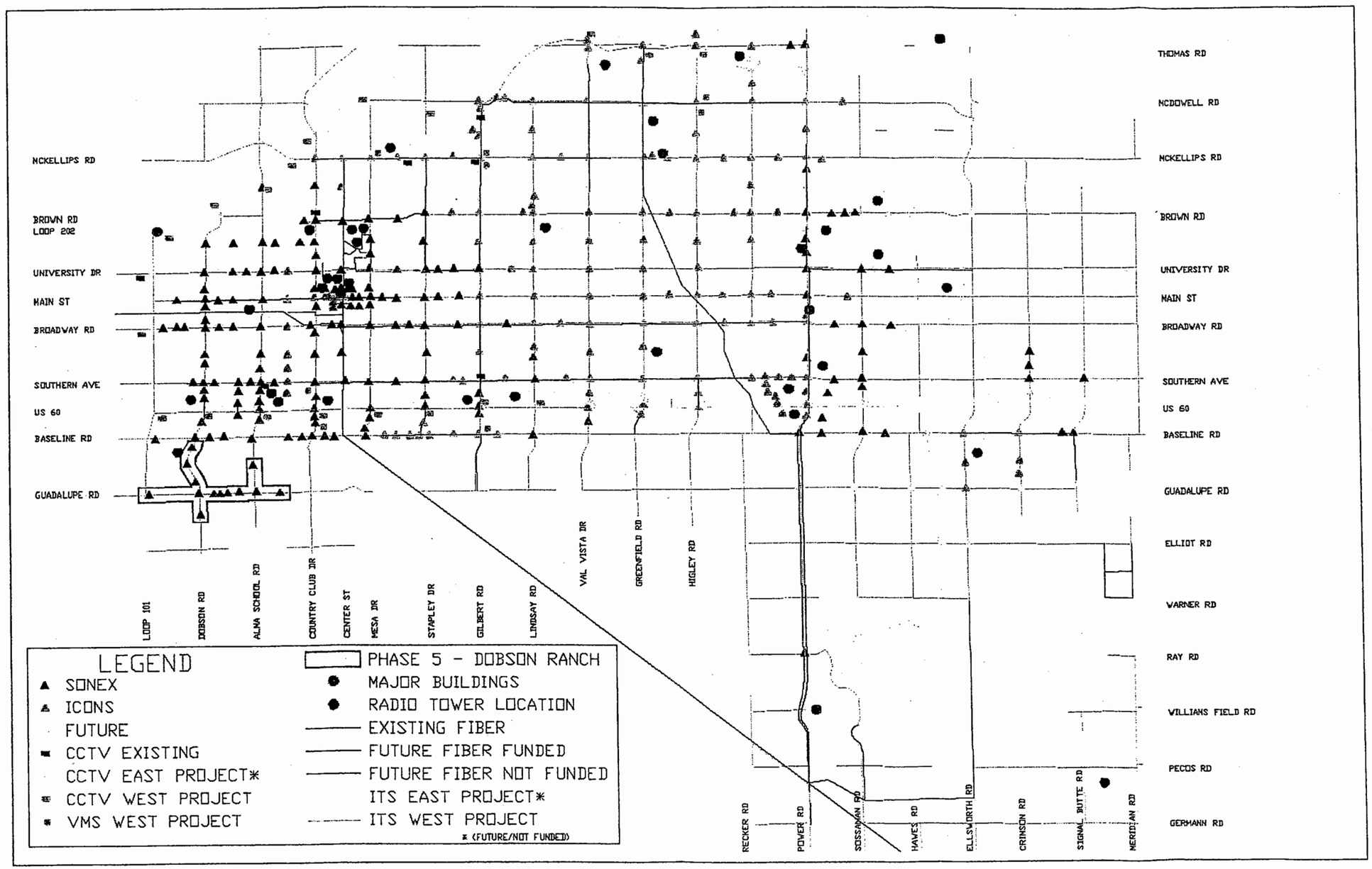
Description	Quantity	Cost
Conduit 4-2"	18,500 LF	$702,000.00
Pull boxes installed	22 ea	$60,000.00
Fiber optic cable installed	22,000 LF	$78,000.00
Fiber Optic Splicing	LS	$80,000.00
Integration of ITS Field Devices	LS	$27,000.00
Traffic Control	LS	$90,000.00
Conduit 2"	300 LF	$10,000.00
ITS Devices (DMS, CCTV, System Detectors)	14 ea	$300,000

$1,347,000.00
$200,000.00
$1,547,000.00

7. Schedule for obligating project

Kick Off Meeting	November	2012
Design Concept Report (DCR) and Environmental Clearance	March	2013
Preliminary Plans (30% Stage) And Preliminary Cost Estimate	April	2013
60% Stage Plans, Specs, and Estimate	June	2013
Submit 95% PS&E (Plans Specs and Estimate)	August	2013
Submit Final Plans (100% Complete)	October	2013
Job advertised (if all clearances on file and current)	November	2013

- Dobson Ranch Ring Integrity



ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **30,000**	2. Name of the Roadway Section Used for the ADT Estimate: **Guadalupe Road**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) X Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **4.5**
7. Township Coordinate of the Midpoint of the Facility: **T1S**	8 Range Coordinate of the Midpoint of the Facility: **R5E**	9. Section Coordinate of the Midpoint of the Facility: **4,5,6,7,8,9**

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **38 mph**

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☐	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
X	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

X Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
X The Project Conforms to Local Land Use Plans
☐ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

X Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

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ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

TOWN OF
QUEEN CREEK

September 1, 2006

Maricopa Association of Governments
302 North 1st Avenue, Suite 300
Phoenix, AZ 85003
ATTN: Mr. Sarath Joshua

Re: ITS Project Application, FY 2008-2012 TIP
Queen Creek Town Center ITS Project

Dear Mr. Joshua:

As you are of aware, Queen Creek has been experience significant growth and transportation issues over the last couple of years. Much of the traffic is generated from areas outside of Maricopa County. In order to address the issue we have been working closely with Maricopa County, Mesa, and Pinal County to coordinate projects in an affective manner to optimize the relief of congestion within the area. With that, the Town of Queen Creek is pleased to submit 3 applications for Federal Congestion Mitigation and Air Quality (CMAQ) funding for arterial ITS projects for FY 2008-2012. These projects will significantly improve traffic congestion on and around the Ellsworth Regional Corridor.

Our first project, for 2008, is the Queen Creek Town Center ITS Project which builds primarily on our $54M Ellsworth Loop Road Improvement District project. This project which will significantly change the nature of the Queen Creek Town Center and provide substantial new capacity for regional traffic. Along each arterial fiber optic cable will be installed with associated devices needed to make use of the otherwise vacant conduit for managing traffic flow through and around Town Center, and also provide basic central traffic management capabilities by implementing traffic signal system software and CCTV monitoring software, along with the associated hardware.

This project request $560,600 of the $1,480,700 project, when fully implemented, the Town Center ITS Project will provide for:

- Coordination of traffic signals (initially 10 built by the I.D. project, but with the foundation established to add future signals town-wide);
- Central monitoring of traffic conditions via CCTV during normal conditions, incidents, and the frequent work zone conditions that will be increasingly common along these critical corridors as Town Center developments are built out; and
- An extension of the Town's communications capabilities to the outer edges of the Town Center area, allowing for future expansion of the fiber infrastructure as adjacent roadways are reconstructed in coming years.

Project two, for 2009, is Rittenhouse ITS, this project continues to build on a Town Capital Improvement Program project to reconstruct a segment of Rittenhouse Road as a multilane divided arterial. This facility's diagonal route across the Town makes it a critical path for regional traffic between regions.

This project request $284,400 of the $741,500 project, when fully implemented, the Rittenhouse ITS Project will provide for:

- An extension of the Town's communications capabilities beyond the Town Center area, allowing for future expansion of the fiber infrastructure to the second commercial/residential core area at Power Ranch/Power Marketplace, as well as a possible future connection to neighboring Gilbert;
- Coordination of traffic signals (2 programmed, with 2 more anticipated); and
- Central monitoring of traffic conditions via CCTV during normal conditions, incidents, and the frequent work zone conditions that will be increasingly common given the pace of development in Queen Creek.

Our last project, for 2012, the Ellsworth ITS Project, this project builds on two road projects which will reconstruct adjacent segments of Ellsworth Road as a multilane divided arterial. This project will complete the Ellsworth Corridor from Hunt Highway to US 60 with ITS capabilities throughout the Queen Creek portion.

This project request $176,200 of the $607,600 project, when fully implemented, the Ellsworth ITS Project will provide for:

- Coordination of traffic signals (6 installed by other projects);
- Central monitoring of traffic conditions via CCTV during normal conditions, incidents, and the frequent work zone conditions that will be increasingly common given the pace of development in Queen Creek; and
- An extension of the Town's communications capabilities beyond the Town Center area along one of the most critical arterials in the Southeast Valley, allowing for a possible future connection to neighboring Pinal County for coordination with the Hunt Highway corridor.

We appreciate your consideration of these applications and are working to solve congestion challenges in our area. If you have any questions or require further details about this project, please contact Michael Pacelli at (480) 358-3065 or email michael.pacelli@queencreek.org.

Sincerely,

9/11/06

Mark A. Young
Intergovernmental Liaison

QNC-01

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – S2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Michael Pacelli, Traffic Engineer, Town of Queen Creek**	2.	Telephone: **480-358-3065**
3.	E-mail **michael.pacelli@queencreek.org**	4.	Date: **9/1/2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name:

   Town of Queen Creek

2. Year (Please check only one box):

   ☒ FY 2008 ☐ FY 2009 ☐ FY 2010 ☐ FY 2012

3. Project Location (The project limits if applicable):

   Queen Creek Town Center Area:
   -- Ellsworth Loop Rd (Approx. 1.6 miles, from Ellsworth Rd South of Queen Creek Wash to Ellsworth Rd at Queen Creek Rd)
   -- Rittenhouse Rd (Approx. 1.1 miles, from QC Marketplace Access Rd to Ocotillo Rd)

4. Type of Work (Description of the work to be performed):

   Establish traffic signal system/ITS infrastructure and basic central traffic management system.

5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.):

   $ 563,600

6. Type of Federal Funds Requested (Please check only one box.):

   ☐ MAG STP ☒ CMAQ

7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.):

   $ 917,100

8. Type of Local Funds to be Used: (Please check only one box.):

   ☐ HURF ☐ Impact Fees
   ☐ General Fund ☐ Bond Proceeds
   ☐ Sales Tax ☐ Private
   ☐ Property Tax ☒ Other, Please specify: **Improvement District (property assessments)**

9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested):

   $ 1,480,700

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Town of Queen Creek, Arizona
Queen Creek Town Center ITS Project
ITS Project Application Form for FY 2008

Part A, Section 2 – Project Description

Item 1 – Project Location

A project is currently in process to construct major roadway improvements in "downtown" Queen Creek. This project, known as the Ellsworth Loop Road Improvement District, will construct a new, six-lane divided arterial bypassing the core of the downtown area, as well as fully reconstruct a substantial portion of Rittenhouse Road in the same area. By diverting through traffic around the downtown core, a pedestrian friendly, village-like area for residential, business, and recreational purposes will be created while routing the high volumes of through traffic around the higher density area. The downtown core, together with the surrounding commercial and high-density residential development, is referred to as "Town Center".

The ITS project overlaps most of the Improvement District, and includes a substantial portion of the Town Center area. It is specifically located on Ellsworth Loop Rd (approx. 1.6 miles, from Ellsworth Rd south of Queen Creek Wash to Ellsworth Rd at Queen Creek Rd) and a portion of Rittenhouse Rd (approx. 1.1 miles, from QC Marketplace Access Rd to Ocotillo Rd). **Figure 1** illustrates the proposed project area.

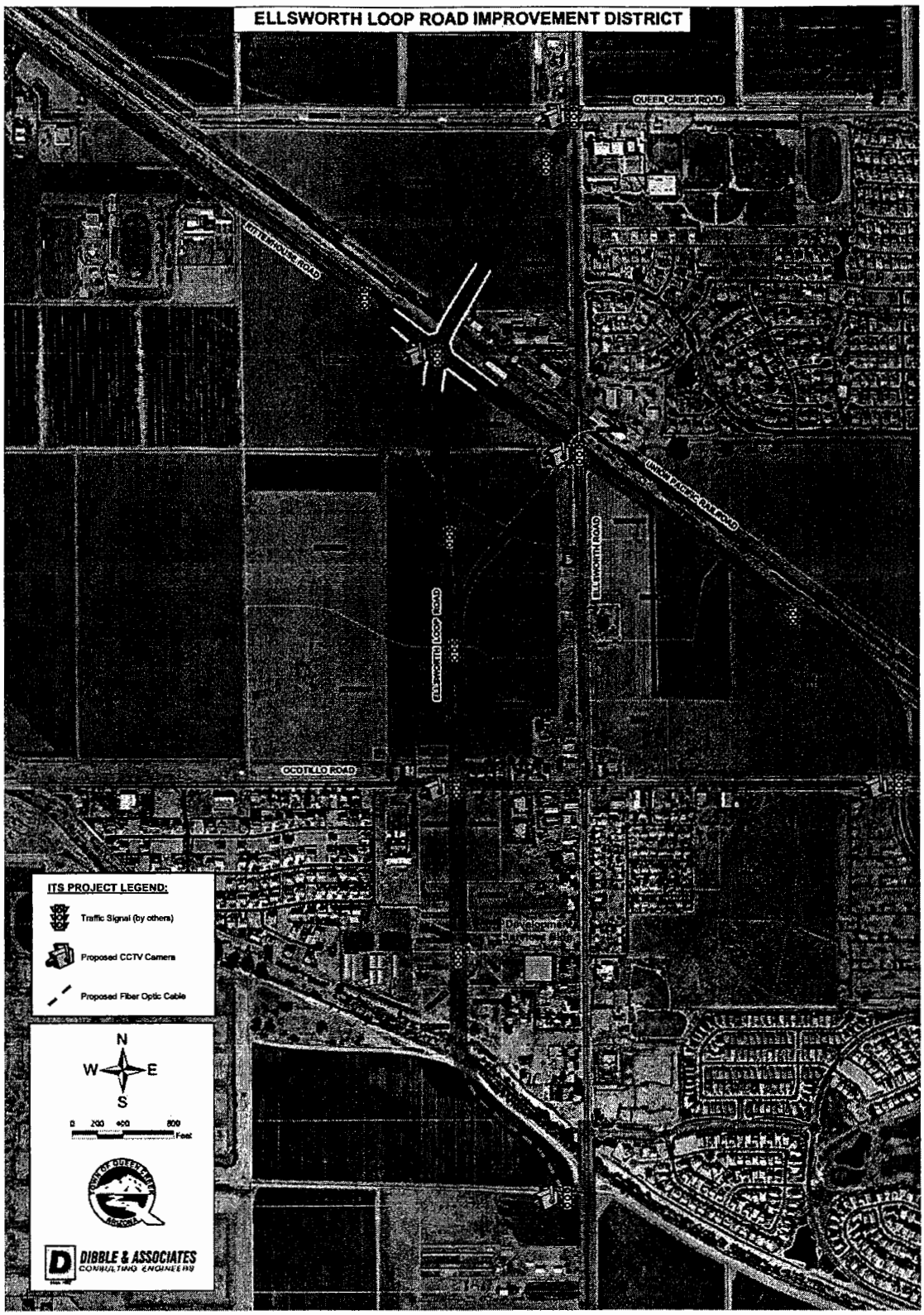

Figure 1 – Proposed Project Area

Item 2 – Project Description

The proposed project serves to reduce the anticipated congestion in the Town Center area, as well as provide a foundation for improved transportation management throughout the Town and between Queen Creek and adjacent jurisdictions.

The separately-funded Improvement District (I.D.) project will install a conduit duct bank along the median of the Loop Rd to serve transportation and other municipal uses. Service drop conduits from the median to each of the ten new signals constructed under the project will also be installed.

The proposed ITS project will integrate with the I.D. project and serve two primary purposes. The first portion of the project provides for signal coordination and management within the Town Center area. The second portion establishes a central management system, connects the Town Center system into it, and provides a foundation for future signal and CCTV management throughout the Town.

1. Use the conduit installed by the Town project to manage traffic flow in the Town Center area:
    a. Install fiber optic cable to provide communications (96 SMFO backbone on Loop Rd and Rittenhouse Rd, with 12 SMFO drops to devices).
    b. Install fiber transceivers for each of the ten signal controllers.
    c. Install six CCTV pan/tilt/zoom dome cameras at critical intersections.
2. Establish basic central traffic management capabilities:
    a. Establish central traffic signal management (procure server, large monitor, and software [likely via partnership with other jurisdiction or statewide contract]).
    b. Establish central CCTV monitoring (procure server, large monitor, and software [likely using Camera Cameleon via ADOT statewide contract]).
    c. Install fiber from the Loop Rd backbone to the Development Services Building, using conduit to be installed by the Town as part of a separate CIP project.

Item 3 – Funding Justification

A key goal of the project is to facilitate the coordinated flow of the heavy traffic volumes that are expected throughout the Town Center area, thereby reducing congestion, improving travel speeds on major arterials, and improving air quality.

Ellsworth Road, a MAG Road of Regional Significance, provides a primary north-south corridor for the region, carrying substantial volumes of through traffic from southern Queen Creek and, to a large extent, from northern Pinal County, to Loop 202, US 60, and to employment centers in Gilbert and Mesa. With the completion of adjacent projects underway by Queen Creek, Mesa, MCDOT, and private development, Ellsworth Road will provide a continuous divided to link northern Pinal County to US 60.

Another key goal is building the foundation of a central traffic management system to which other signals and ITS devices can be connected in subsequent projects.

Item 4 – Cost Breakdown

The spreadsheet shown in **Table 1** includes the costs of the conduit and pull box infrastructure which the Town is installing as part of the Improvement District project and is proposing to use as the local match, as well as a preliminary estimate of the costs to design and implement the Town Center ITS Project, based on past experience with similar projects in the region.

Table 1 – Preliminary Cost Estimate

Local Match Items

ITEM DESCRIPTION	QTY	UNIT	UNIT COST*	EXT COST
Ellsworth Loop Road Improvement District				
NO. 7 PULL BOX W/ EXTENSION	12	EACH	$ 900.00	$ 10,800.00
TYPE MESA LA-612 VAULT	8	EACH	$ 9,800.00	$ 78,400.00
TYPE MESA LA-444 VAULT	16	EACH	$ 2,800.00	$ 44,800.00
VAULT TEST HOLE	8	EACH	$ 375.00	$ 3,000.00
SCH 40 PVC ELECTRICAL CONDUIT, 62 MM (2" WITH NYLON ROPE)	4,710	LF	$ 9.00	$ 42,390.00
SCH 40 PVC ELECTRICAL CONDUIT (12 - 2" WITH NYLON ROPES)	10,065	LF	$ 51.00	$ 513,315.00
RIGID METAL ELECTRICAL CONDUIT (12 - 2" WITH NYLON ROPES)	400	LF	$ 450.00	$ 180,000.00
SUBTOTAL - Ellsworth Loop Road Improvement District				**$ 872,705.00**
Town Capital Improvement Project				
TYPE MESA LA-444 VAULT	3	EACH	$ 2,800.00	$ 8,400.00
SCH 40 PVC ELECTRICAL CONDUIT (4 - 2" WITH NYLON ROPES)	1,200	LF	$ 30.00	$ 36,000.00
SUBTOTAL - Town Capital Improvement Project				**$ 44,400.00**
SUBTOTAL - LOCAL MATCH IMPROVEMENTS				**$ 917,105.00**

** NOTE: For the Local Match, the Unit Cost represents the actual price submitted by the low bidder for the Improvement District.*

Items to be Included in ITS Project (Requested CMAQ Funds)

ITEM DESCRIPTION	QTY	UNIT	UNIT COST**	EXT COST
CCTV DOME CAMERA (PTZ, COLOR, IP)	6	EACH	$ 20,000.00	$ 120,000.00
12 SMFO CABLE	11,000	LF	$ 3.50	$ 38,500.00
96 SMFO CABLE	16,000	LF	$ 5.00	$ 80,000.00
SPLICE ENCLOSURE	14	EACH	$ 1,500.00	$ 21,000.00
FIBER OPTIC TRANSCEIVER	11	EACH	$ 6,000.00	$ 66,000.00
SIGNAL SYSTEM SOFTWARE (PARTNERING W/ OTHER AGENCY)	1	LS	$ 20,000.00	$ 20,000.00
SIGNAL SYSTEM SOFTWARE SERVER (RACK MTD. W/ ACC.)	1	EACH	$ 5,000.00	$ 5,000.00
CAMERA CAMELEON CCTV SYSTEM SOFTWARE (USING ADOT STATEWIDE LIC.)	1	LS	$ 20,000.00	$ 20,000.00
CCTV SYSTEM SOFTWARE SERVER (RACK MTD. W/ ACC.)	1	EACH	$ 5,000.00	$ 5,000.00
40" LCD MONITOR (W/ MTG BRACKETS & ACCESSORIES)	2	EACH	$ 10,000.00	$ 20,000.00
NETWORK SETUP AND CONFIGURATION	1	LS	$ 30,000.00	$ 30,000.00
MOBILIZATION / DEMOBILIZATION	1	LS	$ 5,000.00	$ 5,000.00
TEMPORARY TRAFFIC CONTROL	1	LS	$ 15,000.00	$ 15,000.00
CONTINGENCY	1	LS	15% of cumulative	$ 66,825.00
COMMUNICATIONS SYSTEM DESIGN SUPPORT	1	LS	10% of cumulative	$ 51,233.00
SUBTOTAL				**$ 563,558.00**

*** NOTE: For the Town Center ITS Project, the Unit Cost represents a rough estimate based on similar projects in the region.*

Cost Summary

	% SHARE	COST
Local Match Items	62%	$ 917,100.00
Items to be Included in Town Center ITS Project	38%	$ 563,600.00
TOTAL ESTIMATED PROJECT COST	100%	**$ 1,480,700.00**

Item 5 – Project Schedule

Since all but the last 1,500 feet of conduit will be installed by the Town as part of the independent Ellsworth Loop Road construction project, and that last portion of new conduit needed to reach the Development Services Building runs entirely within the Loop Rd construction limits and the existing Town Hall campus, an abbreviated design and implementation process is proposed, without the need for a DCR and environmental clearance. The proposed schedule is shown in **Table 2.**

Table 2 – Project Schedule

Project Milestone	***Estimated Completion Date***
Apply for ADOT Project Number	11/2007
Receive ADOT Project Number	1/2008
60% Preliminary Plans, Cost Estimate, and Systems Engineering Analysis	4/2008
Final Plans, Cost Estimate and Systems Engineering Analysis	6/2008
Utility Clearance	6/2008
Right-of-Way Clearance	6/2008
Final PS&E Approval	7/2008
Final Deployment	11/2008

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **14,000 (actual 2004)** **40,000 (est. 2010)**	2. Name of the Roadway Section Used for the ADT Estimate: **Ellsworth Rd**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **2.7 miles (approx)**
7. Township Coordinate of the Midpoint of the Facility: **T2S**	8 Range Coordinate of the Midpoint of the Facility: **R7E**	9. Section Coordinate of the Midpoint of the Facility: **S16**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **N/A**
(Loop Rd not built yet - posted speed will be 45 mph)

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☒	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

11. Other Project Information: (Check as many as are applicable):

☒ Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
☒ The Project Conforms to Local Land Use Plans
☒ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

☒ Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website.**

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

QNC-02

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and retumed to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Michael Pacelli, Traffic Engineer, Town of Queen Creek**	2.	Telephone: **480-358-3065**
3.	E-mail **michael.pacelli@queencreek.org**	4.	Date: **9/1/2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name: **Town of Queen Creek**	2. Year (Please check only one box): ☐ FY 2008 ☒ FY 2009 ☐ FY 2010 ☐ FY 2012
3. Project Location (The project limits if applicable): **Rittenhouse Rd (Approx. 1.6 miles, from Sossaman Rd to approx. ½ mile west of Ellsworth Rd)**	
4. Type of Work (Description of the work to be performed): **Establish traffic signal / CCTV system using existing conduit infrastructure.**	
5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.): **$ 172,700**	6. Type of Federal Funds Requested (Please check only one box.): ☐ MAG STP ☒ CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.): **$ 284,400**	8. Type of Local Funds to be Used: (Please check only one box.): ☐ HURF ☐ Impact Fees ☒ General Fund ☐ Bond Proceeds ☐ Sales Tax ☐ Private ☐ Property Tax ☐ Other, Please specify:
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested): **$ 457,100**	

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Town of Queen Creek, Arizona
Rittenhouse ITS Project, Phase A
ITS Project Application Form for FY 2009

Part A, Section 2 – Project Description

Item 1 – Project Location

The Town has planned a Capital Improvement Project to reconstruct Rittenhouse Road from Sossaman Road to the west project limit of the Ellsworth Loop Road Improvement District, approximately ½ mile west of Ellsworth Road. **Figure 1** illustrates the proposed project area.

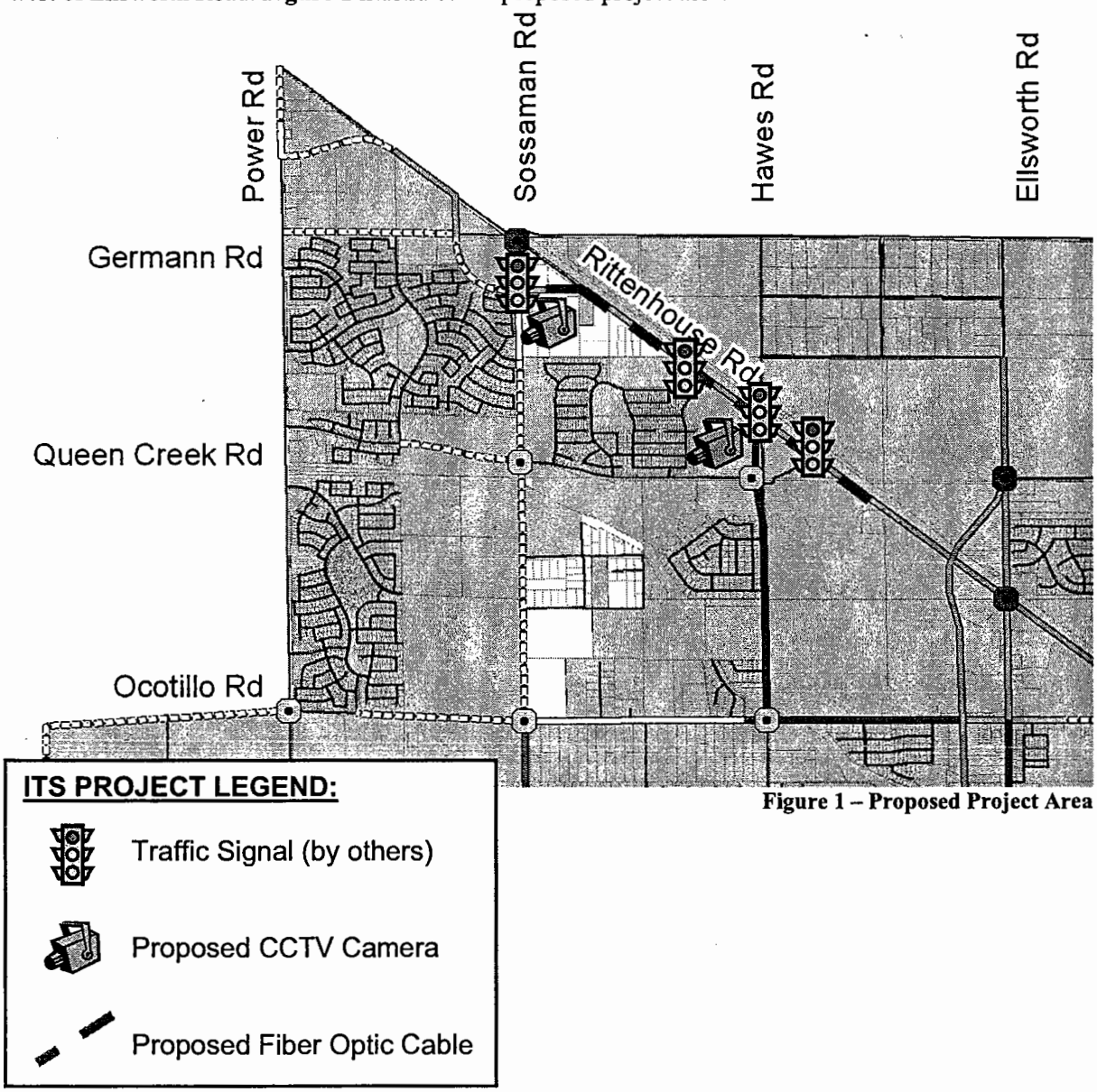

Figure 1 – Proposed Project Area

Item 2 – Project Description

The proposed project serves to manage traffic congestion along a section of Rittenhouse Road, which, given its position as the only northwest/southeast diagonal roadway cutting across Queen Creek, is an ideal route to carry regional traffic between Queen Creek, Gilbert, Mesa, and northern Pinal County. Also, by weaving its way through the Town from corner-to-corner, this major arterial provides access to many of the Town's largest residential and commercial traffic generators.

A Town CIP project will reconstruct the section of Rittenhouse Road from Sossaman Road to the west limit of the Ellsworth Loop Road Improvement District, and, at the same time, will install conduit to serve transportation and other municipal uses.

The proposed Rittenhouse ITS Project (Phase A) will extend the fiber path through this conduit from the Town Center area (to be installed by the proposed Town Center ITS Project, for which FY 2008 CMAQ funding has been requested). It will also install transceivers at four signalized intersections (two programmed and two anticipated), as well as two CCTV cameras (at Sossaman and at Hawes). Later phases of this project will extend the fiber and ITS devices to additional sections of Rittenhouse Road.

Item 3 – Funding Justification

A key goal of the project is to facilitate the coordinated flow of the heavy traffic volumes that currently exist, and are expected to increase substantially over the next ten years, thereby reducing congestion, improving travel speeds, and improving air quality.

With implementation of the separate Town Center ITS Project, the Town will have a central traffic signal and CCTV system, and fiber to the east end of the Rittenhouse Road project, allowing the project this application covers to extend the Town's traffic management capacity to an additional section of one of the Town's most critical arterials, and nearly to the boundary with Gilbert.

Item 4 – Cost Breakdown

The spreadsheet shown in **Table 1** includes the estimated costs of the conduit and pull box infrastructure which the Town will install as part of the CIP project and is proposing to use as the local match, as well as a preliminary estimate of the costs to design and implement Phase A of the Rittenhouse ITS Project, based on past experience with similar projects in the region.

Table 1 – Preliminary Cost Estimate

Local Match Items

ITEM DESCRIPTION	QTY	UNIT	UNIT COST*	EXT COST
Rittenhouse Road CIP Project, Sossaman to ID Project Limits				
NO. 7 PULL BOX W/ EXTENSION	8	EACH	$ 900.00	$ 7,200.00
TYPE MESA LA-444 VAULT	6	EACH	$ 2,800.00	$ 16,800.00
SCH 40 PVC ELECTRICAL CONDUIT, 62 MM (2" WITH NYLON ROPE)	600	LF	$ 9.00	$ 5,400.00
SCH 40 PVC ELECTRICAL CONDUIT (4 - 2" WITH NYLON ROPES)	8,500	LF	$ 30.00	$ 255,000.00
SUBTOTAL - Rittenhouse Road CIP Project, Sossaman to ID Project Limits				**$ 284,400.00**

** NOTE: For the Local Match, the Unit Cost represents the actual price submitted by the low bidder for the Improvement District.*

Items to be Included in ITS Project (Requested CMAQ Funds)

ITEM DESCRIPTION	QTY	UNIT	UNIT COST**	EXT COST
CCTV DOME CAMERA (PTZ, COLOR, IP)	2	EACH	$ 20,000.00	$ 40,000.00
12 SMFO CABLE	1,000	LF	$ 3.50	$ 3,500.00
96 SMFO CABLE	9,500	LF	$ 5.00	$ 47,500.00
SPLICE ENCLOSURE	5	EACH	$ 1,500.00	$ 7,500.00
FIBER OPTIC TRANSCEIVER	4	EACH	$ 6,000.00	$ 24,000.00
MOBILIZATION / DEMOBILIZATION	1	LS	$ 5,000.00	$ 5,000.00
TEMPORARY TRAFFIC CONTROL	1	LS	$ 9,000.00	$ 9,000.00
CONTINGENCY	1	LS	15% of cumulative	$ 20,475.00
COMMUNICATIONS SYSTEM DESIGN SUPPORT	1	LS	10% of cumulative	$ 15,698.00
SUBTOTAL				**$ 172,673.00**

*** NOTE: For the Rittenhouse ITS Project, the Unit Cost represents a rough estimate based on similar projects in the region.*

Cost Summary

	% SHARE	COST
Local Match Items	62%	$ 284,400.00
Items to be Included in Rittenhouse ITS Project, Phase A	38%	$ 172,700.00
TOTAL ESTIMATED PROJECT COST	100%	**$ 457,100.00**

Item 5 – Project Schedule

Since all of the conduit and pull boxes will be installed by the Town as part of an independent CIP project, no new construction (i.e., work requiring excavation) is needed. Therefore, an abbreviated design and implementation process is proposed, without the need for a DCR and environmental clearance. The proposed schedule is shown in **Table 2**.

Table 2 – Project Schedule

Project Milestone	*Estimated Completion Date*
Apply for ADOT Project Number	11/2008
Receive ADOT Project Number	1/2009
60% Preliminary Plans, Cost Estimate, and Systems Engineering Analysis	4/2009
Final Plans, Cost Estimate and Systems Engineering Analysis	6/2009
Utility Clearance	6/2009
Right-of-Way Clearance	6/2009
Final PS&E Approval	7/2009
Final Deployment	11/2009

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **8,400 (est. 2006)**	2. Name of the Roadway Section Used for the ADT Estimate: **Rittenhouse Rd**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **4**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **4**	6. Length of the Facility (in miles): **1.6 miles (approx)**
7. Township Coordinate of the Midpoint of the Facility: **T2S**	8 Range Coordinate of the Midpoint of the Facility: **R7E**	9. Section Coordinate of the Midpoint of the Facility: **S21**

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **N/A**
(Improved Rittenhouse Rd not built yet - posted speed will be 40-45 mph)

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☒	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

11. Other Project Information: (Check as many as are applicable):

- ☒ Includes Traffic Signal Improvements for a Single Agency
- ☐ Includes Traffic Signal Improvements that Apply to More than One Agency
- ☒ The Project Conforms to Local Land Use Plans
- ☐ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only one box)

- ☒ Congestion Management System (CMS)
- ☐ Bridge Management System (BMS)
- ☐ Pavement Management System (PMS)
- ☐ Public Transportation Management System (PTMS)
- ☐ Safety Management System (SMS)
- ☐ Intermodal Management System (IMS)
- ☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website.**

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: (1) The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1million per program year per agency (Exception - any regional ITS project that involves three or more MAG agencies). (2) Joint regional ITS projects that involve three or more MAG agencies may exceed $1million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1million limit. (3) there is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.

QNC-03

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Cover Sheet

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. A total of $12.3 million is available for programming ITS projects in the following amounts: **FY 2008 – $2.43M, FY 2009 - $2.49M, FY 2010 - $2.04M and FY 2012 - $5.34M.**

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

This application form includes:

- Part A: Project Description and TIP Listing Information. In Part A, the applicant provides the minimum information necessary to list a project in the TIP as required by applicable federal regulations and general descriptive information necessary for MAG staff and technical committees to evaluate the project.
- Part B: Project Congestion Management System (CMS) and Congestion Mitigation Air Quality (CMAQ) Data: In Part B, the applicant provides data necessary for MAG staff to calculate CMS and CMAQ scores for projects.
- Part C: MAG Technical Committee Additional Information. This section provides guidelines for submission of ITS projects. The MAG ITS Committee is charged with evaluating and recommending ITS projects for federal funding.

Deadlines and Transmittal Instructions: This form should be completed and returned to MAG Offices by **5:00 p.m. September 1, 2006**. The mailing address and FAX number for the MAG offices is:

Maricopa Association of Governments
302 North 1 st Avenue, Suite 300
Phoenix, Arizona 85003
FAX Number: (602) 254-6490

If you wish to e-mail this information, please send it to state@mag.maricopa.gov.

Electronic Download Information: A downloadable version of these forms in Microsoft Word is available on the MAG website at www.mag.maricopa.gov. If requested, MAG staff will also provide these forms via e-mail or FAX.

MAG Contact Information: If you have any questions, please contact Stephen Tate or Paul Ward at (602) 254-6300 or at state@mag.maricopa.gov.

Agency Contact Information: Please complete the following contact information for each project, so that we may contact you should we need additional information.

1.	Name of the Agency Contact for the Project Request: **Michael Pacelli, Traffic Engineer, Town of Queen Creek**	2.	Telephone: **480-358-3065**
3.	E-mail **michael.pacelli@queencreek.org**	4.	Date: **9/1/2006**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

General Instructions: This form is to be used to request federal Congestion Mitigation and Air Quality (CMAQ) funding available through the Maricopa Association of Governments for Intelligent Transportation System (ITS) projects to be included in the FY 2008-2012 MAG Transportation Improvement Program. Currently, funding is available ONLY for programming projects that seek to implement ITS improvements on the arterial street system. Freeway ITS improvements, through 2024, have been programmed.

Separate application forms are available for bicycle, pedestrian and transit projects. Also, a general application form is provided for projects that do not fit the categories listed. Freeway, street and rail transit projects will be programmed in a separate process, so please **DO NOT** use the general form to apply for funding for freeway, street and rail transit projects.

Section One: TIP Listing Information.

Please complete the following information for all projects. If the project is accepted for MAG federal funding, the project information provided in this section will appear in the TIP as provided by the applicant

1. Sponsoring Agency Name: **Town of Queen Creek**	2. Year (Please check only one box): ☐ FY 2008 ☐ FY 2009 ☐ FY 2010 ☒ FY 2012
3. Project Location (The project limits if applicable): **Ellsworth Rd (Approx. 2.5 miles, from Ellsworth Loop Rd to Empire Blvd / Hunt Hwy)**	
4. Type of Work (Description of the work to be performed): **Establish traffic signal / CCTV system using existing conduit infrastructure.**	
5. Amount of Federal Funds Requested (This amount cannot exceed **70.0** percent of the total cost of the project.): **$ 255,200**	6. Type of Federal Funds Requested (Please check only one box.): ☐ MAG STP ☒ CMAQ
7. Amount of Local Funds to be Used (This amount cannot be less than **30.0** percent of the total cost of the project.): **$ 176,200**	8. Type of Local Funds to be Used: (Please check only one box.): ☐ HURF ☐ Impact Fees ☒ General Fund ☐ Bond Proceeds ☐ Sales Tax ☐ Private ☐ Property Tax ☐ Other, Please specify:
9. Total Cost of the Project: (This amount must equal the sum of the federal and local amounts requested): **$ 431,400**	

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part A: Project TIP Listing Information and Description

Section Two: Project Description

Please complete the following information for all projects. The information provided is necessary for MAG staff and modal technical advisory committees (TACs) to understand and evaluate the federal funding request. Information supplied under items 1, 2 and 3 will be provided to the TACs as part of the evaluation process.

1. Please attach a map, drawing, photograph, plans or other graphic showing the location of the project. If no graphic is available or it is not feasible to provide one, please indicate this fact in the space below.

2. Please attach a description of the project. This description should be no longer than 150 words and should include a description of the work to be performed, whether the project includes equipment purchase only, design, right-of-way acquisition and construction phases, and the relationship of the project to other programmed and planned projects in the TIP, ITS Strategic Plan, Regional Transportation Plan, local capital improvement programs or local plans.

3. Please attach an explanation of why the project should receive MAG federal funding. This explanation should be no longer than 150 words and should describe the problem or goal the project is intended to address. If CMAQ funding is requested the explanation should indicate what air quality benefits are to be achieved by the project. The explanation could also describe the project's expected congestion mitigation or reduction impacts, service to underserved communities, safety benefits, usage levels, advancement of regional or multi-jurisdictional goals, improvement in network continuity and accessibility and other benefits.

4. Please provide a cost breakdown for the project including quantities and unit costs used. This information is requested only for the purpose of aiding MAG staff in determining the eligibility of the project for the federal funding requested and for identifying potential problems with the cost estimate.

5. Please provide a schedule for obligating the project. Generally a construction project will require 18 months to design and obtain environmental, right-of-way and utilities clearance necessary to obligate the project. A design project will generally require 3 to 6 months to obligate.

Town of Queen Creek, Arizona
Ellsworth ITS Project, Phase A
ITS Project Application Form for FY 2012

Part A, Section 2 – Project Description

Item 1 – Project Location

The Town has planned a Capital Improvement Project, in partnership with private development, to reconstruct Ellsworth Road from the southern end of the Ellsworth Loop Road Improvement District, approximately ¼ mile north of Chandler Heights Road, to Cloud Road. Maricopa County and the Town are also working together to reconstruct Ellsworth Road for the remaining section from Cloud Road to Empire Blvd, where it will tie in to the Hunt Highway improvements planned by Pinal County. The total length of both projects is about 2.5 miles.

Figure 1 illustrates the proposed project area.

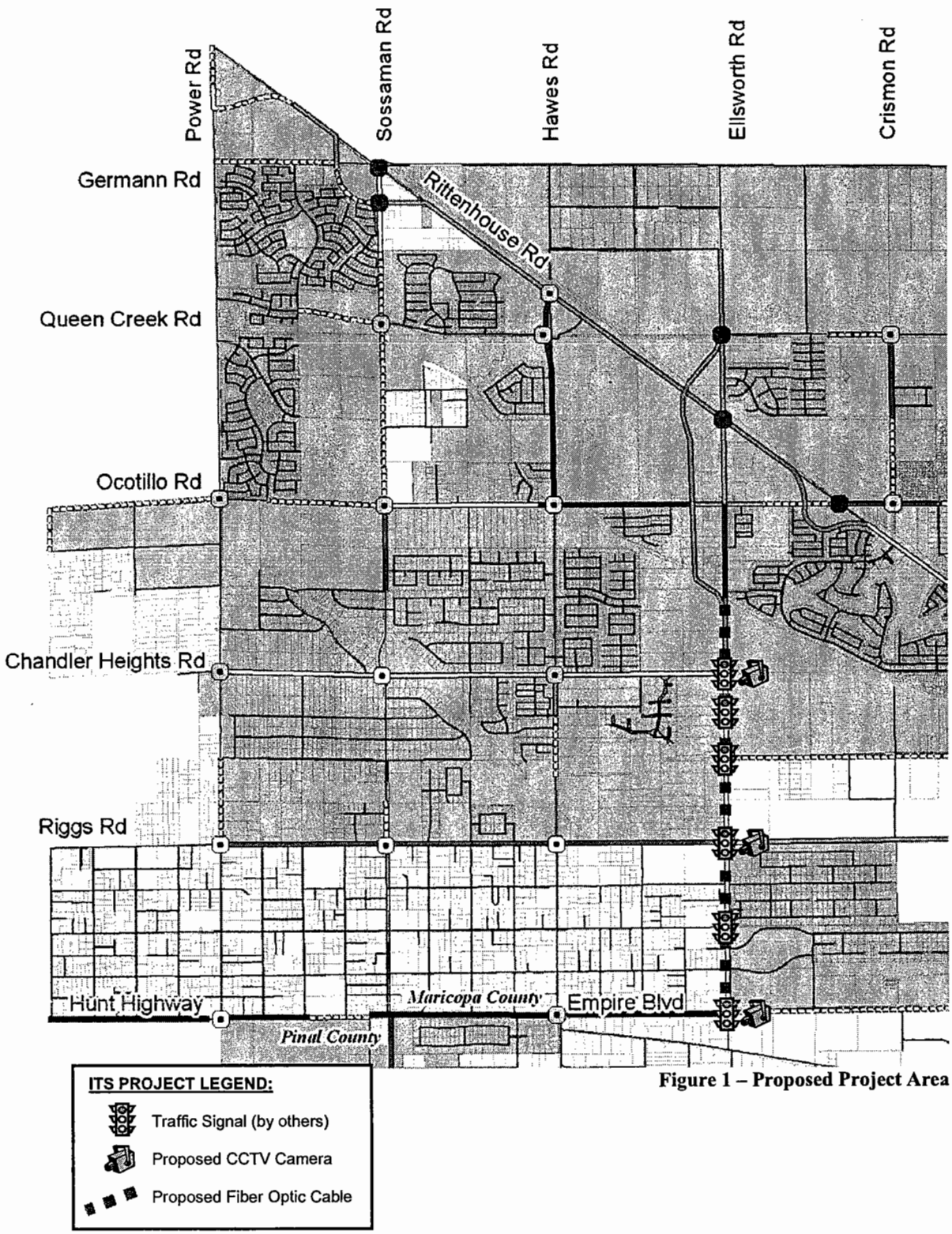

Figure 1 – Proposed Project Area

Item 2 – Project Description

A key goal of the project is to facilitate the coordinated flow of heavy traffic volumes on a 2.5 mile section of Ellsworth Road, thereby reducing congestion, improving travel speeds on major arterials, and improving air quality.

Ellsworth Road, a MAG Road of Regional Significance, provides a primary north-south corridor for the region, carrying substantial volumes of through traffic from southern Queen Creek and, to a large extent, from northern Pinal County, to Loop 202, US 60, and to employment centers in Gilbert and Mesa. With the completion of adjacent projects underway by Queen Creek, Mesa, MCDOT, and private development, Ellsworth Road will provide a continuous divided to link northern Pinal County to US 60.

The proposed Ellsworth ITS Project (Phase A) will extend the fiber path from the Town Center area (to be installed by the proposed Town Center ITS Project, for which FY 2008 CMAQ funding has been requested). It will also install transceivers at six signalized intersections, as well as three CCTV cameras (at Chandler Heights, Riggs, and Empire). This project would complete the traffic management system to the southern Town and County limits.

Item 3 – Funding Justification

A key goal of the project is to facilitate the coordinated flow of the heavy traffic volumes that currently exist, and are expected to increase substantially over the next ten years, thereby reducing congestion, improving travel speeds on major arterials, and improving air quality.

With implementation of the separate Town Center ITS Project, the Town will have a central traffic signal and CCTV system, and fiber to the north end of the Ellsworth Road project, allowing the project this application covers to extend the Town's traffic management capacity to a key section of one of the Town's and Region's most critical gateway arterials, extending advanced traffic management capabilities to the Pinal County line.

Item 4 – Cost Breakdown

The spreadsheet shown in **Table 1** includes the estimated costs of the conduit and pull box infrastructure which the Town will install as part of the CIP project and is proposing to use as the local match, as well as a preliminary estimate of the costs to design and implement Phase A of the Ellsworth ITS Project, based on past experience with similar projects in the region.

It is important to note that only the conduit infrastructure to be installed by the Town and private development in the northern segment (Loop Rd to Cloud Rd) is being counted as local match. Although conduit installed by the joint County/Town project south of Cloud Road will be used in the ITS project, its value is not considered local match, as the precise contribution of Town funds versus County funds to this project has not yet been determined.

Table 1 – Preliminary Cost Estimate

Local Match Items

ITEM DESCRIPTION	QTY	UNIT	UNIT COST*	EXT COST
Ellsworth Road CIP Project, ID Project Limits to Hunt Hwy				
NO. 7 PULL BOX W/ EXTENSION	4	EACH	$ 900.00	$ 3,600.00
TYPE MESA LA-444 VAULT	4	EACH	$ 2,800.00	$ 11,200.00
SCH 40 PVC ELECTRICAL CONDUIT, 62 MM (2" WITH NYLON ROPE)	600	LF	$ 9.00	$ 5,400.00
SCH 40 PVC ELECTRICAL CONDUIT (4 - 2" WITH NYLON ROPES)	5,200	LF	$ 30.00	$ 156,000.00
SUBTOTAL - Ellsworth Road CIP Project, ID Project Limits to Hunt Hwy				**$ 176,200.00**

** NOTE: For the Local Match, the Unit Cost represents the actual price submitted by the low bidder for the Improvement District.*

Items to be Included in ITS Project (Requested CMAQ Funds)

ITEM DESCRIPTION	QTY	UNIT	UNIT COST**	EXT COST
CCTV DOME CAMERA (PTZ, COLOR, IP)	3	EACH	$ 20,000.00	$ 60,000.00
12 SMFO CABLE	1,500	LF	$ 3.50	$ 5,250.00
96 SMFO CABLE	14,500	LF	$ 5.00	$ 72,500.00
SPLICE ENCLOSURE	7	EACH	$ 1,500.00	$ 10,500.00
FIBER OPTIC TRANSCEIVER	6	EACH	$ 6,000.00	$ 36,000.00
MOBILIZATION / DEMOBILIZATION	1	LS	$ 5,000.00	$ 5,000.00
TEMPORARY TRAFFIC CONTROL	1	LS	$ 12,500.00	$ 12,500.00
CONTINGENCY	1	LS	15% of cumulative	$ 30,263.00
COMMUNICATIONS SYSTEM DESIGN SUPPORT	1	LS	10% of cumulative	$ 23,201.00
SUBTOTAL				**$ 255,214.00**

*** NOTE: For the Rittenhouse ITS Project, the Unit Cost represents a rough estimate based on similar projects in the region.*

Cost Summary

	% SHARE	COST
Local Match Items	41%	$ 176,200.00
Items to be Included in Ellsworth ITS Project, Phase A	59%	$ 255,200.00
TOTAL ESTIMATED PROJECT COST	100%	**$ 431,400.00**

Item 5 – Project Schedule

Since all of the conduit and pull boxes will be installed by the Town, County, or private development as part of an independent projects, no new construction (i.e., work requiring excavation) is needed. Therefore, an abbreviated design and implementation process is proposed, without the need for a DCR and environmental clearance. The proposed schedule is shown in **Table 2**.

Table 2 – Project Schedule

Project Milestone	*Estimated Completion Date*
Apply for ADOT Project Number	11/2011
Receive ADOT Project Number	1/2012
60% Preliminary Plans, Cost Estimate, and Systems Engineering Analysis	4/2012
Final Plans, Cost Estimate and Systems Engineering Analysis	6/2012
Utility Clearance	6/2012
Right-of-Way Clearance	6/2012
Final PS&E Approval	7/2012
Final Deployment	11/2012

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

General Instructions: In Part B, the applicant provides data necessary for MAG staff to calculate Congestion Management System (CMS) and CMAQ scores for projects.

Section One: Congestion Management System and CMAQ Data

Please complete the following information for all street projects. The information used in this section is used to calculate CMS scores.

1. Current Average Daily Traffic (ADT) on the Facility or the Nearest Parallel Facility of a Similar Type: **14,000 (actual 2004)** **40,000 (est. 2010)**	2. Name of the Roadway Section Used for the ADT Estimate: **Ellsworth Rd**	3. Type of Facility to be Improved (Check only one box): ☐ Arterial > 4 legs (e.g. Grand) ☒ Arterial Street ☐ Collector Street ☐ Other
4. Number of **Through** Lanes Currently on the Facility Prior to Project Completion (Do not include right, left or center turn lanes): **6**	5. Number of **Through** Lanes on the Facility After the Project is Completed (Do not include auxiliary lanes): **6**	6. Length of the Facility (in miles): **2.5 miles (approx)**
7. Township Coordinate of the Midpoint of the Facility: **T2S**	8 Range Coordinate of the Midpoint of the Facility: **R7E**	9. Section Coordinate of the Midpoint of the Facility: **S16**

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part B: CMS and CMAQ Data

10. If the project is expected to improve traffic signal coordination, please do the following:

a. Enter the pre-improvement (current) traffic speed of the traffic corridor: **N/A**
(Improved Ellsworth Rd not built yet - posted speed will be 40-45 mph)

b. In the Table Check the Box in The Row That Best Describes the Project (Check Only One Box):

	Before (Pre-Improvement) Condition	After (Post Improvement) Condition	Expected Increase In Speed
☐	Non-interconnected, pre-timed signals with old timing plan	Advanced computer-based control	25.0 percent
☐	Interconnected, pre-timed signals with old timing plan	Advanced computer-based control	17.5 percent
☒	Non-interconnected signals with traffic-actuated controllers	Advanced computer-based control	16.0 percent
☐	Interconnected, pre-timed signals with actively managed timing	Advanced computer-based control	8.0 percent
☐	Interconnected, pre-timed signals with various forms of master control and various qualities of timing plans	Optimization of signal timing plans. No change in hardware	12.0 percent
☐	Non-interconnected, pre-timed signals with old timing plan	Optimization of Signal Timing Plans	7.5 percent

11. Other Project Information: (Check as many as are applicable):

☒ Includes Traffic Signal Improvements for a Single Agency
☐ Includes Traffic Signal Improvements that Apply to More than One Agency
☒ The Project Conforms to Local Land Use Plans
☒ The facility is on the adopted MAG Roads of Regional Significance Network

12 Management System (Please check only <u>one</u> box)

☒ Congestion Management System (CMS)
☐ Bridge Management System (BMS)
☐ Pavement Management System (PMS)
☐ Public Transportation Management System (PTMS)
☐ Safety Management System (SMS)
☐ Intermodal Management System (IMS)
☐ Other

13. Please identify the priority the agency places on this project. If for example, the agency is submitting three requests (including any joint requests) for ITS projects and this is the agency's highest priority, then a "1" should be entered. Each priority entered should be unique – e.g. no two requests for ITS projects should have the same priority.

1

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

General Instructions: This part is required for all ITS projects and must be submitted to MAG electronically following instructions provided under **Information at MAG website**.

All ITS project requests should also include the coversheet, Part A and Part B of the Transportation Improvement (TIP) ITS Project Application Form.

Overview of the ITS Project Review and Ranking Process

The MAG ITS Committee is responsible for reviewing all proposed projects and recommending a list of arterial ITS projects for each programming cycle. The committee has developed a new Project Rating System that is expected to be adopted on September 6, 2006. This system will be utilized by the committee to develop a preliminary ranking from the list of qualifying ITS projects submitted to MAG by member agencies. The final committee recommendation of projects for inclusion in the annual update of the Transportation Improvement Program (TIP) will be generated through a subjective ranking process that will consider: (1) Estimated reductions in emissions due to each project; (2) Ranking based on the Project Rating System; and (3) Project presentation by the proposing agency.

The determination, of which projects are considered qualified ITS projects eligible for federal funds, is based on the National ITS Architecture (developed by the USDOT) and the Regional ITS Architecture for the Phoenix metropolitan region (developed by MAG). A Regional ITS Architecture that is compatible with the National ITS Architecture is a federal requirement for all major metropolitan regions. Such an architecture has been defined for the MAG region and is included in the MAG ITS Strategic Plan Update of April 2001. The National ITS Architecture refers to Market Packages as ITS applications that are tailored to fit real-world transportation problems and provide related ITS User Services. All project applications must provide information on applicable ITS User Services and Market Packages, that will be directly addressed by the proposed project.

The project review and ranking process helps ensure that all proposed projects would further the regional goals for improving arterial traffic operations, road safety and advance regional integration, utilizing ITS applications. For each proposed ITS project, an application must be submitted to MAG using the Excel form available at the MAG website (see next page). For joint ITS projects, a single application must be submitted by the lead agency, clearly identifying contributions by each partner to the minimum local share of 30 percent. The following information is required for all projects and must be provided on the form.

- A brief project description narrative – goals, objectives, and how the project would addresses arterial ITS functions (see Draft Arterial ITS Plan at the MAG website)
- Requested project budget – Federal funds requested and local funds contributed by each agency (a minimum of 30 percent local match is required for all projects)
  Guidelines: The total of all federal funds requested for ITS projects by any MAG member agency should not exceed $1 million per program year per agency. Exception - any regional ITS project that involves three or more MAG agencies) Joint regional ITS projects that involve three or more MAG agencies may exceed $1 million in federal cost. For these projects, the federal cost component in each jurisdiction will not be counted against the $1 million limit. There is no limit on the number of projects may be submitted, but each project requires the 30 percent local match
- A list of anticipated project tasks
- Proposed fiscal year and estimated timeline for project development and implementation – receipt of an ADOT project number, project obligation and final deployment (month/yr)
- The plan for maintaining and operating the proposed ITS elements in the project – source of local funds and availability of operators and maintenance personnel

ITS PROJECT APPLICATION FORM – FY 2008-2012 TIP
Part C: MAG Technical Committee Additional Information

- A commitment to address the federal requirement for a Systems Engineering Analysis of the proposed project within the agency's project development process (MAG guidelines on how to carry out this step will be forthcoming)
- Applicable ITS User Services, Market Packages from National ITS Architecture
- Required communications for data sharing with other agencies (if any)
- Information flows and data flows (REQUIRED for projects that will exchange information with other regional agencies)

Information at MAG website

The Excel sheet to be used for submitting information on proposed arterial ITS projects is available at:

http://www.mag.maricopa.gov/detail.cms?item=3948

Other information available at this site:

Draft Arterial ITS Plan, August 7, 2006 – describes arterial ITS functions
Links to National ITS Architecture website and information on User Services and Market Packages

Part C Transmittal and Contact Information

Please submit Part C of this application via email, using the Excel sheet, to Leo Luo at:
lluo@mag.maricopa.gov

If you have questions or need assistance with the project application process, please contact Kiran Guntupalli or Leo Luo at (602) 254-6300.